AMENDMENT TO THE SPECIFICATION:

Please replace the following paragraphs.

At page 1, line 5.

[01] The invention relates to a device for remote or non-contact temperature measurement. Such a device [[devices]], which is [[are]] known in the art as a radiometer [[radiometers]], performs non-contact temperature measurement and comprises a detector for receiving heat radiation emanating from an energy zone on an object surface of an object of measurement, an infrared (IR) optical system for imaging the heat radiation emanating from the energy zone onto the detector, and a sighting arrangement for identifying the position and size of the energy zone on the object of measurement by means of visible light. A further processing arrangement which converts the detector signal into a temperature indication is also connected to the detector.

Starting at page 4, line 28.

[28] As described above, the energy zone is the area on an object that is imaged onto the IR detector. Fig. 2 depicts a cross-section of the beam profile for a near-focus radiometer. The vertical lines A, B, C, and D [[and C]] represent objects at four [[three]] different image planes.

[29] Fig. 3 depicts the display device with circles superimposed over the image of an object surface generated by the imaging system. The circles A, B, C and D [[and C]] correspond to the size of the energy zone on the object when the object is positioned at image plane A, B, C, or D [[or C]] in Fig. 2. Accordingly, the size of the circle is determined by the distance of the object from the radiometer. In this example, the size of the circles decreases with increasing distance from the radiometer because all the image planes are located between the radiometer and the sharp focus spot.

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[35] Thus, by controlling the select-input of the Multiplexer 99 synchronously with the pixel clock and the state of the Column Counter 91 and the Row Counter 92 any geometric figure 49 or text 89 can be [[is]] shown on the Display 20 as an overlay.

[36] The Circle ROM [[44]] 95a stores circle data for generating images of different size circles with an output of the Circle ROM [[44]] 95a coupled via the OR gate 98 the select-input of the Multiplexer 99. The outputs of the Column Counter 91, the Row

Counter 92, and the Range Finder 18 are combined in the Circle Address Generator to provide the address data for the Circle ROM [[44]] 95a.

[37] The stored circles in the Circle ROM [[44]] 95a have sizes that, when overlaid on the object image, indicate the extent of the displayed object surface included within the energy zone for a particular object distance. The selection of which of the circles, stored in the Circle ROM [[44]] 95a, to overlay is defined by the output of the Range Finder 18.

[38] The Circle ROM [[44]] 95a is programmable and for a particular device responds to distance data from the Rangefinder 18 to select the correct circle data that indicates the correct size of the energy zone when overlaid on the image of the object surface provided by the Camera Chip 14. The Circle ROM [[44]] 95a is also programmed to position the selected circle within the display to compensate for parallax due to misalignment between the optical axes of the IR optical system and the video camera system.

[39] The Character ROM 97 stores data for generating text to indicate the object surface temperature. The IR Optics, Detector, and analog and digital signal processing chain 80 measures the IR signal, transmitted from the object surface, calculates the object surface temperature and provides a digital signal, which represents the object surface temperature. This signal is combined with the outputs of the Column Counter 91 and the Row Counter 92 inside the Character Address Generator to provide the address data for the Character ROM 97. The output of the Character ROM 97 controls via the OR gate 98 the select-input of the Multiplexer 99 to overlay the object surface temperature 89 information on the Display 20.

[40] Because of the inclusive coupling of the outputs of the Circle ROM [[44]] 95a and the Character ROM 97 both can be overlaid: a circle to show the zone of energy collection and text to indicate the object surface temperature.

[41] The Display 20 in this embodiment is an LCD display. As depicted in Fig. 4, the Display Chip overlays a circle onto the image of the object surface to indicate the portion of the object surface included in the energy zone 49 as well as the temperature information 89.

[42] In this embodiment, the components Column Counter 91, Row Counter 92, Image Address Generator 93, Sync Pulse Generator 94, Circle Address Generator 95, Character Address Generator 96 [[97]], Or Gate 98, and Multiplexer 99 are combined in a single complex programmable logic chip (CPLD) 46, as shown in Fig. 7,

described below. Also the Circle ROM [[44]] 95a and the Character ROM 97 are combined in a single Flash ROM chip. The digital signal processing components of the Range Finder 18 as well as the IR signal processing chain 80 are combined in a single microcontroller chip 72, as shown in Fig. 7 as well.

[43] A first alternative embodiment is depicted in Fig. 4A. In this embodiment the Display 20 is an Organic LED (OLED) display. Further, in the embodiment depicted in Fig. 4 ROM chips with a data width of only 1 bit are required. The more practical approach is the use of standard 8 bit wide ROMs and to convert the 8 bit parallel output into a 1 bit serial output via the Shift Registers 101 and 102 as depicted in Fig. 4A.

[44] A second alternative embodiment is depicted in Fig. 4B. The embodiment depicted in Fig. 4 would require fairly large ROM chips to implement the Circle ROM [[44]] 95a as well as the Character ROM 97. A more practical approach is the use of a second Dual Port RAM 112 as a general overlay memory as depicted in Fig. 4B. In this case the outputs of the Column Counter 91 and the Row Counter 92 form the overlay address inside the Overlay Address Generator 111 and the overlay address is used to read data from the Overlay Dual Port RAM 112, which controls the Multiplexer 99. The overlay data is written by the Microcontroller 110 which calculates, in real time, both the overlay circle and the temperature indication text from the outputs of the Range Finder 18 and the IR Signal Processing 80. The Microcontroller 110 can physically be the same chip as the Microcontroller 72 in Fig. 7 described below.

AMENDMENT TO THE CLAIMS:

This listing of the claims replaces all prior versions, and listings, of claims in the application. Please amend claims 1, 6, and 8.

1. (currently amended) A system for indicating the location of an energy zone on an object surface, with the energy zone being an area on the object surface that is imaged onto an IR detector by the IR optical system included in a non-contact IR thermal measurement device, said system comprising:

a video sub-system for displaying ~~an~~ a displayed image of at least a part of the object surface not included in the energy zone and of at least a part of the object surface included in the energy zone;

a range-finding sub-system for measuring the distance between the non-contact IR thermal measurement device and the object surface and outputting a distance signal indicating a measured distance; and

an optical overlay sub-system, coupled to the range-finding sub-system, for overlaying a shape outline, having a dimension determined by a received measured distance, over ~~a~~ the displayed image of the object surface and with the shape outline indicating the extent of a displayed image included in the energy zone.

2. (original) The system of claim 1 where the range-finding sub-system comprises:

a laser diode for emitting a laser-beam along a first optical axis;

a position-sensitive photodiode, having a major surface and displaced from the first optical axis, for receiving a portion of the laser beam reflected from the object surface and indicating the position of a reflected portion on the major surface.

3. (original) The system of claim 2 where the first axis is substantially coincident with the optical axis of the IR optical system so that the laser beam indicates the center of the energy zone.

4. (original) The system of claim 1 where the video-subsystem comprises:

a digital image generating chip for outputting digital image data, a display device for displaying digital image data, and an image controller chip for controlling the display device to display digital image data provided by the image generating chip;

and where the optical overlay subsystem includes:

a storage device for storing circle data utilized to form circle images of different diameters;

and with the image controller coupled to the storage device and the range-finding sub-system, programmed to select circle data from the storage device for generating a circle having a diameter size determined by the measured distance provided by the range-finding sub-system.

5. (original) The system of claim 1 where the shape outline is a circle.

6. (currently amended) A method for indicating the location of an energy zone on an object surface, with the energy zone being an area on the object surface that is imaged onto an IR detector by the IR optical system included in a non-contact IR thermal measurement device, said method comprising steps of:

acquiring a digital image of the object surface;

displaying a digital image of the object, with the digital image including a part of the object surface not included in the energy zone;

measuring the distance to the object surface to obtain a distance value;

forming a geometrical shape indicating the portion of the object surface indicating the portion of the object surface included in the energy zone; and

overlaying the geometrical shape over the digital image of the object surface to indicate the location of the energy zone.

7. (original) The method of claim 6 where the step of forming a geometrical image further comprises the step of:

compensating for parallax between the acquired digital image and an optical axis of the IR optical system.

8. (currently amended) A system for indicating the location of an energy zone on an object surface, with the energy zone being an area on the object surface that is imaged

onto an IR detector by the IR optical system included in a non-contact IR thermal measurement device, said system comprising:

means for acquiring a digital image of the object surface;

means for displaying a digital image of the object surface, with the digital image including a part of the object surface not included in the energy zone;

means for measuring the distance to the object surface to obtain a distance value;

means for forming a geometrical shape indicating the portion of the object surface indicating the portion of the object surface included in the energy zone; and

means for overlaying the geometrical shape over the digital image of the object surface to indicate the location of the energy zone.

9. (original) The system of claim 8 where the means for forming a geometrical image further comprises:

means for compensating for parallax between the acquired digital image and an optical axis of the IR optical system.